

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2320
Gaithersburg, Maryland 20899-2320

SRM Number: 929a
MSDS Number: 929a
SRM Name: Magnesium Gluconate
Dihydrate

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Description: This Standard Reference Material (SRM) is certified for use as an assay standard for magnesium. It is intended primarily for use in the calibration and standardization of procedures employed in clinical analysis and for the routine critical evaluation of daily working standards used in these procedures. The material is magnesium gluconate dihydrate: $\text{Mg}(\text{C}_6\text{H}_{11}\text{O}_7)_2 \cdot 2\text{H}_2\text{O}$ and is supplied in a unit of 5 g.

Substance: Magnesium Gluconate Dihydrate.

Other Designations: Magnesium Gluconate Dihydrate [magnesium gluconate, s.p. grade; d-gluconic acid, magnesium salt (2:1), dihydrate; magnesium d-gluconate dihydrate; magnesium gluconate dihydrate]

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	CAS Registry	EC Number (EINECS)	Concentration (%)
Magnesium Gluconate Dihydrate	59625-89-7	not assigned	100

Index, R/S Phrases (EC): Not determined.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

Major Health Hazards: No significant target effects reported.

Physical Hazards: Negligible.

Potential Health Effects (Short Term Exposure)

Inhalation: Irritation to the mucous membranes and respiratory tract.

Skin Contact: Irritation.

Eye Contact: Irritation.

Ingestion: Gastrointestinal irritation.

Listed as a Carcinogen/Potential Carcinogen

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	<u> </u>	<u>X</u>
In the International Agency for Research on Cancer (IARC) Monographs	<u> </u>	<u>X</u>
By the Occupational Safety and Health Administration (OSHA)	<u> </u>	<u>X</u>

4. FIRST AID MEASURES

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Get immediate medical attention.

Skin Contact: Wash affected skin with soap and water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: If a large amount is swallowed, get medical attention. **Antidote:** calcium gluconate, intravenous.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Negligible fire hazard.

Extinguishing Media: Use extinguishing agents appropriate for the surrounding fire.

Fire Fighting: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Flash Point (°C): Not

Autoignition (°C): 1200

Method: Not Applicable

Applicable

Flammability Limits in Air (Volume %): Upper: Not Applicable

Lower: Not Applicable

Flammability Class (OSHA): not applicable

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Collect spilled material in appropriate container for proper disposal. Keep out of water supplies and sewers. Refer to Section 13 "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

Safe Handling Precautions: Wear splash resistant safety goggles. Wear chemical resistant clothing and gloves. An eye wash station and a quick drench shower should be readily available near handling and use areas. See Section 8 "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Magnesium Gluconate Dihydrate: No occupational exposure limits established.

Ventilation: Provide local exhaust ventilation system.

Respirator: If necessary, refer to the "NIOSH Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84" for selection and use of respirators with organic vapor cartridges certified by NIOSH.

Eye Protection: Wear safety goggles. DO NOT wear contact lenses in the laboratory. An eye wash station should be readily available near handling and use areas.

Personal Protection: Wear protective clothing and chemically resistant gloves to prevent skin exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Magnesium Gluconate Dihydrate
Appearance and Odor: white powder, odorless
Molecular Formula: (C ₆ H ₁₁ O ₇) ₂ •2H ₂ O
Molecular Weight: 452.7
Melting Point (°C): 200
Density (g/cm³): not available
Solubility in Water (@ 25 °C): 16 %
Solvent Solubility: Very slightly soluble in alcohol; insoluble in ether

10. STABILITY AND REACTIVITY

Stability: ☒ Stable ☐ Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: None reported.

Incompatible Materials: Oxidizing materials.

Fire/Explosion Information: Magnesium gluconate dihydrate is a fire and explosion hazard in contact with strong oxidizers. See Section 5 "Fire Fighting Measures".

Hazardous Decomposition: Thermal decomposition or combustion produces oxides of carbon and sulfur.

Hazardous Polymerization: ☐ Will Occur ☒ Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: ☒ Inhalation ☒ Skin ☒ Ingestion

Magnesium Gluconate Dihydrate: No toxicological data reported.

Health Effects (Acute Exposure):

Inhalation may cause respiratory tract irritation. Skin contact and eye contact may cause irritation. No specific information is available for ingestion. Refer to Section 4 "First Aid Measures".

Medical Conditions Generally Aggravated by Exposure: None reported.

12. ECOLOGICAL INFORMATION

Environmental Summary: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations. Keep out of sewers and water supplies.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not applicable.

Canadian Transportation WHMIS: Not applicable.

15. REGULATORY INFORMATION

U.S. REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Not applicable.

SARA Title III Section 302 (40 CFR 355.30): Not applicable.

SARA Title III Section 304 (40 CFR 355.40): Not applicable.

SARA Title III Section 313 (40 CFR 372.65): Not applicable.

OSHA Process Safety (29 CFR 1910.119): Not applicable.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

ACUTE: No

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

STATE REGULATIONS

California Proposition 65: Not regulated.

CANADIAN REGULATIONS

WHMIS Classification: Not determined.

EUROPEAN REGULATIONS

EU Classification: Not determined.

Danger/hazard Symbol

Not determined.

EU Risk and Safety Phrases

Not Determined.

NATIONAL INVENTORY STATUS

U.S. Inventory (TSCA): Not listed.

TSCA 12(b), Export Notification: Not listed.

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Magnesium Gluconate Dihydrate*, 19 March 2003.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.